

Stress response predictor in police officers may indicate those at high risk for PTSD

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Stress-related disorders are often linked to people working in the line of fire. In a study led by researchers at NYU Langone Medical Center in collaboration with the San Francisco VA Medical Center and the University of California, San Francisco, police recruits were assessed during academy training before critical incident exposure and provided salivary cortisol at first awakening and after 30 minutes. Police academy recruits who showed the greatest rise in the stress hormone cortisol after waking up were more likely to show acute stress symptoms in response to trauma years later as police officers.

The study led by Dr. Charles Marmar, professor and chair of the Department of Psychiatry at the NYU Langone Medical Center, is one of the largest to identify a possible method for predicting vulnerability to stress during and after a traumatic event. The results of this study are published in the December, 2011 issue of [Biological Psychiatry](#).

"This study is significant as a potential indicator in determining when people may exhibit [stress symptoms](#) in the future," said Dr. Marmar.

"Few studies have prospectively examined the relationships among pre-exposure hypothalamic-pituitary-adrenal activity, acute stress reactions and [post traumatic stress disorder](#) (PTSD). The findings may lead us to new insights on how to identify those who are at a higher risk of PTSD."

Researchers measured cortisol levels in 296 police recruits when they awakened and then 30 minutes later. The difference between the two levels is known as cortisol awakening response, or CAR. The study

found the greater CAR during academy training predicted greater peritraumatic dissociation and acute stress disorder symptoms over the first 3 years of police service.

Stronger CAR predicted two specific stress responses: dissociation – a feeling of dreamlike unreality during the traumatic event – and acute stress disorder symptoms after the event. Symptoms of [acute stress disorder](#) include intrusive memories of the event, increased heart rate, faster breathing, and conscious avoidance of thoughts or feelings related to the event.

"This research is just the tip of the iceberg," said Dr. Marmar. "We need additional studies to determine if early identification of these risk factors will result in intervention which could help reduce or minimize the long-term effects of trauma exposure."

Provided by New York University School of Medicine

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